#### OROVILLE FACILITIES RELICENSING

#### DRAFT PROPOSED-APPROACH FOR CUMULATIVE IMPACTS ANALYSIS

#### INTRODUCTION AND PROPOSED ACTION

The California Department of Water Resources (DWR), licensee for the Oroville Facilities, FERC Project 2100 (P-2100) is preparing an Application for New License (Application) using the Alternative Licensing Procedure. The Application will include a Preliminary Draft Environmental Assessments (PDEA) addressing Federal Energy Regulatory Commission (FERC) and National Environmental Policy Act (NEPA) requirements. DWR is also preparing an Environmental Impact Report (EIR) addressing requirements of the California Environmental Quality Act (CEQA). The proposed action to be addressed in the Application, PDEA, and EIR is the FERC granting a New License to DWR to continue to operate and maintain P-2100.

DWR is conducting a multi-discipline studies program, including an analysis of P-2100's beneficial and adverse cumulative impacts on resources discussed below, to determine the best adapted plan¹ for future operations of P-2100. In the fall of 2001, DWR, working with the Collaborative Team, presented a preliminary list of relicensing issues in Scoping Document 1 (SD1) and conducted scoping meetings to identify additional issues not already identified in SD1. The Collaborative Team is developing study plans to address the issues and approved many of the study plans in the first quarter of 2002. Fisheries study plans are still under development and cumulative impact study plans have not been developed. The cumulative impact analysis process will include the development of study plans, execution of studies, interpretation of results and documentation of results in the PDEA/EIR. The cumulative impact analysis process will be conducted study plans will be prepared in an iterative manner based upon this guidance document and the information developed to date in the relicensing process. Cumulative impact study plan development and analysis will be conducted in accordance with the Process Protocols adopted for this relicensing.

At this time, DWR does not propose any modifications to the existing P-2100 physical facilities or operations. Modifications may be identified during the course of conducting the studies program and consultations with resource agencies, Tribes, non-governmental organizations and other parties.

#### **GENERAL APPROACH**

### Statutory Requirements/Guidance

<sup>&</sup>lt;sup>1</sup> Section 10(a)(1) of the Federal Power Act requires the Commission to ensure that the project to be licensed is best adapted to a comprehensive plan for developing the waterway for beneficial public purposes. (Federal Power Act, as amended by the Electric Consumers Protection Act of 1986)

The proposed-approach for assessing cumulative impacts<sup>2</sup> was developed in considering the requirements of NEPA, as set forth in guidance provided by the Council on Environmental Quality (CEQ), and the requirements of CEQA, as set forth in the Guidelines for Implementation of the California Environmental Quality Act. In addition, consideration was given to guidance on cumulative impact analysis assessment provided by the Federal Energy Regulatory Commission and the federal Endangered Species Act (ESA). Consideration was also given to cumulative impact analyses assessments prepared for other hydropower relicensing proceedings that have used the Alternative Licensing Procedures. As appropriate, the most stringent requirements from NEPA, CEQA and ESA will apply in the development of cumulative impact analysis study plans. The proposed-approach is preliminary guidance subject to furt her revision.

In conducting this cumulative impacts analysis, DWR proposes that the Collaborative Team consider employing a number of tools, including, but not limited to: CEQ's Principles of Cumulative Effects Analysis and FERC's guidelines for preparing environmental assessments, Section V.B. Cumulative Effects. Copies of these tools are presented in Attachment 1.

The proposed approach for relicensing P-2100 consists of six steps that address both adverse and beneficial effects on specific resources. Pursuant to our Process Protocols, this guidance states our working approach and is not binding or final. The proposed approach is designed to simultaneously satisfy the cumulative impacts requirements of NEPA, CEQA and the Federal Power Act. Additional input and guidance is being incorporated from the approach to Endangered Species Act Impact Analysis that is under parallel development.

#### **Purpose of Cumulative Impacts Analysis**

The purpose of cumulative impacts analysis is to ensure that federal decisions consider the full range of consequences of actions. Appropriate cumulative impacts analysis injects environmental considerations into the planning process early so that ongoing planning decisions are more comprehensive in nature and take into account broader agency policies, programs and strategies.

## **Guiding Principles of Cumulative Impacts Analysis**

<sup>2</sup> The Council on Environmental Quality defines cumulative impact as the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such actions (40 CFR Section 1508.7). The Guidelines for Implementation of the California Environmental Quality Act (2002) defines .cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Furthermore, "the individual effects may be changes resulting from a single project or a number of separate projects," and "the cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects." And, "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."

Increasingly, decision makers recognize the importance of looking at their projects in the context of other development in the community or region. Although no universally accepted framework for cumulative impacts analysis exists, general principles have gained acceptance (See Attachment 1).

In its handbook "Considering Cumulative Effects Under the National Environmental Policy Act" (January 1997), the CEQ states that: "[c]umulative effects analysis should 'count what counts', not produce superficial analyses of a long laundry list of issues that have little relevance to the effects of the proposed action or the eventual decision."<sup>3</sup>

#### STEPS FOR THE CUMULATIVE IMPACTS ANALYSIS

Six steps for the cumulative impacts analysis are presented below. These steps are not sequential, but rather overlapping and iterative. In particular, Steps 1, 2, and 3 will initially occur during study plan preparation, based on existing information and input from the scoping process. Steps 1, 2, and 3 will be reconsidered during implementation of the study program to ensure potentially affected resources are identified, that there is a potential for project effects on the potentially affected resource, and that the geographic bounds are appropriate.

#### 1. Identify and Describe- Potentially Affected Resources

The cumulative impact assessment will focus on potentially affected environmental resources. Potentially affected resources are resources singled out for consideration because of their importance and the possibility they may be impacted by the ongoing or potential relicensed operation and maintenance of Project 2100 under new license conditions. An initial list of potentially affected resources will be developed based upon concerns presented during the scoping process, in comprehensive plans, and from comments and recommendations received from the relicensing participants cCollaborative team. Information on the effects of other projects (see step 4 below) on these potentially affected resources will be gathered during the relicensing study program for possible inclusion in the final cumulative impact assessment presented in the

Section 15065, Mandatory Findings of Significance, subpart (c), provides further guidance regarding cumulative impacts:

<sup>&</sup>lt;sup>3</sup> The CEQA Guidelines provide guidance to focus the cumulative impacts discussion on relevant issues. These include Section 15130, Discussion of Cumulative Impacts, subpart (b):

<sup>(</sup>b) The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

<sup>(</sup>c) "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects as defined in Section 15130.

APEA/DEIR. The potentially affected resources included in the final cumulative <u>impact analysis assessment</u> will be those then identified through study to be impacted directly or indirectly by the ongoing or potential relicensed operation and/or maintenance of Project 2100

Potentially affected resources are currently grouped under environmental, recreational and/or cultural resources resource areas. It is proposed that eFach work group will review all relevant issues and identify those potentially affected resources in each of the resource areas that should be included in the initial list of potential affected resources. For environmental resources, cumulative impact areas identified for evaluation consist of geomorphology, water quality (e.g. - water temperature), aquatic resources anadromous fish (e.g. - fish passage and hatchery operations), terrestrial resources, and threatened, endangered, and proposedendangered species, and aquatic species and terrestrial species. For endangered, threatened or proposed species potentially affected by the project affected resources, resource agencies should provide specific information on the potential species that could be eumulatively affected, within each of the eumulative impact areas

#### 2. <u>Determine if Potential for Impacts Exists</u>

The APEA/DEIR study program will determine which resources are directly or indirectly impacted by the ongoing and potential relicensed operation and/or maintenance of Project 2100, consistent with the impact evaluation requirements of both NEPA and CEQA <sup>4</sup>. [CEQ definitions of direct and indirect will be added as footnotes in next draft.] The cumulative impact analysis assessment will include each affected resource for which a potentially significant impact- may occur. However, the cumulative impact analysis assessment will include affected resources not significantly impacted when the less-than-significant impacts added to other development impacts that are less than significant impacts could result in significant impacts to the resource. Determinations on potential impacts to resources should be based on the record and should be accomplished through the collaborative process using agreed upon criteria, consistent with the impact evaluation requirements of both NEPA and CEQA. Any determinations so made will be made in accordance with the process protocol adopted for this relicensing. Affected resources upon which potentially significant impacts may occur will be considered in the final cumulative impact analysis assessment.

#### 3. Identify Geographic Bounds and Temporal Bounds for Analysis

The geographic boundary ies for each study in the APEA/DEIR program will be determined on a case-by-case resource-by-resource basis, following the guidance provided by NEPA, CEQA, ESA and the FERC environmental document content requirements. The general- focus will be the Feather River or Feather River basin. The downstream-boundary for an individual study will be the point where the study may provide as a reasonable measure of the project's potential impact on the potentially

<sup>&</sup>lt;sup>4</sup> Direct effects are those that occur in the same place and at the same time and are a direct result of the proposed action. Indirect effects can occur at a distance from the proposed action, or the effects may appear some time after the proposed action occurs.

affected resource in question. FERC has also explained that "In the environmental review process, <u>practical limits</u> must necessarily be established regarding the geographic area in which impacts of the proposed action are likely to occur, the scope of the analysis could otherwise be virtually unlimited." The boundary may subsequently be adjusted on the basis of <u>specific studies or</u> new information, including a prior year's study results. We give two examples, based on existing information. The appropriate study boundary for impact on the stage of river flow appears to be the confluence with the Sacramento River. The appropriate boundary for impact on water supply may not extend south of the Delta or to the State Water Project service areas, <u>since-provided</u> FERC relicensing of the Oroville Facilities does not appear to <u>result in new developmentincrease average water deliveries to</u>, or to induce growth in, State Water Project service areas.

Both the NEPA CEQ Guidelines and the CEQA Guidelines will be followed in considering the effects of closely related past, present, and reasonably foreseeable probable future actions or projects.

#### 4. <u>Identify other Development</u>

The final cumulative <u>impact analysis assessment</u> will consider other past, present, and reasonably foreseeable future projects and activities that may have an impact on a potentially affected resource also affected by the license for Project 2100. This scope will include: the non-licensed-hydropower functions of this project (water supply and flood control), other hydropower projects, logging, grazing, mining, and irrigation in the Feather River basin and perhaps other State Water Project facilities, which could impact—a the potentially affected resource. Future projects are considered to be reasonably foreseeable if the environmental documentation is available to confirm and reasonably quantify impacts to the potentially affected resources and/or there is a pending application when the final cumulative impact analysis assessment is prepared for Project 2100. Such related projects or activities may be included in the cumulative impact analysis assessment—even if they, or mitigation measures for their contributions to cumulative impacts, are not within the FERC's jurisdiction in this proceeding.

An initial step for understanding past and ongoing impacts on potentially affected resources will be the review and use of comprehensive plans and other regional studies for cumulative impact analysis, e.g., FERC documents, CALFED, CVPIA and Sacramento/San Joaquin comprehensive study. Use of such information is consistent with CEQ guidance that studies by other agencies should be used to analyze cumulative effects. Additional information to supplement the existing studies may be considered on a case-by-case basis.

Related future projects will be added, as needed, to complete the cumulative impact analysis, and will include an evaluation as to whether the additional information is necessary to comply with NEPA, CEQA, and the FERC environmental document content requirements.

<sup>&</sup>lt;sup>5</sup> Public Service Co. of New Hampshire, 68 FERC at 61,863-864, emphasis added.

#### 5. <u>Determine Overall Impact</u>

The cumulative impact <u>analysis assessment</u> will evaluate adverse and positive impacts. Specifically, it will identify measures <u>which-that</u> may prevent, mitigate, or compensate for the licensee's contribution to the cumulative impacts. It will identify: (1) those measures which are within FERC's jurisdiction to include in a new license for Project 2100; (2) other measures which, although outside of such jurisdiction, may be appropriate for inclusion in a comprehensive settlement agreement for Project 2100, since implementation is within the control of potential signatories; and (3) other-measures for implementation by CALFED or other programs. However, in accordance with CEQA Guidelines Section 15126.4(a)(4), mitigation included in the settlement agreement for Project 2100 should be limited to the project's proportionate share of the cumulative impacts.

## 6. Document Determinations of Impact

The cumulative impact findings will be documented in the APEA/DEIR.

#### **REFERENCES**

- 1. Guidelines for Implementation of the California Environmental Quality Act, State of California, Office of Planning and Research, 2002.
- Preparing Environmental Assessments, Guidelines for Applicants, Contractors, and Staff, Federal Energy Regulatory Commission, Office of Energy Projects, March 14, 2001.
- 3. Cumulative Environmental Impacts Analysis, Federal Energy Regulatory Commission, circa 1992.
- 4. Considering Cumulative Effects Under the National Environmental Policy Act, Council on Environmental Quality, 1997.
- 5. Interagency Task Force Report on NEPA Procedures in FERC Hydroelectric Relicensing, Prepared by the Work Group on the Coordination of Federal Mandates: Federal Energy Regulatory Commission, U.S. Department of the Interior, U.S. Department of Commerce, U.S. Department of Agriculture, Environmental Protection Agency, and Advisory Council on Historic Preservation, May 2000.

#### ATTACHMENT 1

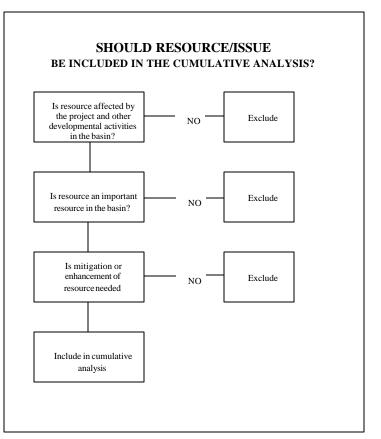
#### PREPARING ENVIRONMENTAL ASSESSMENTS

GUIDELINES FOR APPLICANTS, CONTRACTORS, AND STAFF
Federal Energy Regulatory Commission
March 14, 2001

### **B.** Cumulative Effects

In this section, you'll identify resources that will get a cumulative impacts analysis based on the scooping meeting, site visit, and comments on the scooping documents; the license application' and consultation with the agencies and nongovernmental organizations (NGOs). With that information, you'll determine the appropriate geographic and temporal scope of analysis for those resources. Below, we discuss (1) how to determine which resources need a cumulative effects analysis; (2) the geographic scope of the cumulative analysis and (3) the temporal scope of analysis.

(1) Selecting Resources for Cumulative Analysis: CEQ defines cumulative impacts as impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency or person undertakes the actions. Hydro projects can contribute to cumulative effects when their effects overlap with those of other activities in space, or time, or both. Effects can be either direct or indirect. Direct effects are those that occur in the same place and at the same time and are a direct result of the proposed action. For example, water quality might be affected by reduced spillage at the dam. Indirect effect can



occur at a distance from the proposed action, or the effects may appear some time after the proposed action occurs. For example, and upstream timber harvest area and upstream water sewage treatment plant may affect water quality, in addition to the effects on water quality from the proposed action. Scoping meetings, the application, agency correspondence, and agency and public interest in a particular resource will help you to define whether a resource is cumulatively affects.

When selecting resources for cumulative analysis, it can be very helpful to run the resource through a process such as the one at the right.

Additional guidance on defining cumulative analysis resources can found in Considering Cumulative Effects under the National Environmental Policy Act (Council on Environmental Quality, 1997) which is available on the web at http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm

Example of a Cumulative effects section with a resource selected:

#### **B.** Cumulative Effects

According to the Council on Environmental Quality's regulations for implementing NEPA (§1508.7), an action may cause cumulative impacts on the environment if it's impacts overlap in time and/or space with the impacts of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities.

Based on our review of MHP's license application and agency and public comments, we have identified the coldwater fisheries resource as having potential to be cumulatively affected by the project in combination with other past, present and future activities. The coldwater fisheries resource was selected because irrigation, domestic water treatment and hydroelectric developments and diversions along the waterway have affected the fishery and habitat by altering the flow regime, blocking or delaying fish movement, and entraining fish into diversion canals or penstocks.

Example of a Cumulative Effects section with no resources selected:

## B. Cumulative effe cts

According to the Council on Environmental Quality's regulations for implementing NEPA (§1508.7), an action may cause cumulative impacts on the environment if it's impacts overlap in time and/or space with the impacts of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities. Through scooping, agency consultation, and our independent analysis we've identified no resources that would be cumulatively affected by continuing to operate the Angus Project. The project is located in a very small watershed with very little existing or planned future developmental activity other that the existing hydro project.

(2) Geographic Scope of Cumulative Analysis: As the CEQ says, without spatial boundaries, a cumulative effects assessment would be global, and while this may be appropriate for some issues such as global warming, it's not appropriate for most other issues. The scooping process, consultation, site visits, and the license application will help you identify resources that are cumulatively affected. Here, you should briefly describe how those resources are cumulatively affected and explain your choice of the geographic scope of analysis It's important to remember that no every resource will have the same geographic scope.

To determine spatial boundaries, consider the distance the impact can travel in the context of resource effects from other hydro and non-hydro activities that might affect a wide area. Specifically, you should determine the area(s) that will be affected by the proposed action (impact zone), list the cumulative effects resources within that area that could be affected by the proposed action, and determine the geographic area outside of the impact zone that is occupied by those resources. Finally, you should consider the management plans and jurisdictions of other agencies for the cumulatively affected resource.

For hydropower projects, the geographic scope may be the river basin or mainstem river for some resource such as anadromous fish, or the stream reach and surrounding lands for an endangered plant. You should describe the geographic scope for each cumulatively affected resource.

When defining your geographic scope, discuss the location of other hydro projects and other major developmental activities within the area (such as water withdrawals for irrigation or public water supply; a steam plant that discharges into the impoundment, a water sewage treatment plant located upstream of the project; or a paper mill located on the river that affects water quality). Include a schematic diagram of these developments and/or list them in a table. Briefly describe how your project interacts, affects, or is affected by, these other hydro and water resource developments. The length of discussion should reflect the significance of the interaction. Include details of the effects of these interactions in the environmental impacts analysis section.

Example of a geographic scope on analysis section:

#### 1. Geographic Scope

There are about 44 other dams used for hydroelectric generation in the Copper River Basin. About half of these dams are located on the lower 80-mile-long part of the basin while the other half are located in the upper 70-mile-long part of the basin. An 80 mile-long segment of the river separates these two groups of dams.

These dams have cumulatively affected the fishery (anadromous fish species) and recreation (canoeing and <u>kayaking</u>) on the Copper River. In the fishery (Section V.B.2) and Recreation (Section V.B.5) sections of this DEA, we discuss the site-specific as well as the cumulative effects of relicensing the Angus Project on <u>anadromous fish and recreational boating.</u>

Since a series of dams in the lower reach of the Copper River block the access of several anadromous fish species, we limit our look at the cumulative fishery effects of the Angus Project to potential measures that would help restore fish populations in the basin.

To look at the cumulative impacts on boating recreation, we limit our analysis to the upper river-the 20 mile reach between the Falls and the city where there are eight existing dams.

(3) Temporal Scope of Analysis: The temporal scope includes a brief discussion of past, present, and future actions, and their effects on resources based on the new license term (30-50 years). In this section, you should highlight the effect on the cumulatively affected resources from reasonably foreseeable future actions (for example, the effect on wetlands from a planned timber harvest, or the effect on project operations from a proposed water withdrawal for a ski resort). You should discuss the past actions' effects on the resource in the affected environment section [for an example, see section C below].

Example of a temporal scope section:

#### 2. Temporal Scope

The temporal scope of analysis includes a discussion of the past, present, and reasonably foreseeable future actions and their effects on water, fishery, and recreation resources. Based on the term of the proposed license, we will look 30-50 years into the future, concentrating on the effects on water, fishery, and recreational resources from reasonably foreseeable future actions. The historical discussion is limited, by necessity, to the amount of available information. We identified the present resource conditions base on the license application, agency comments, and comprehensive plans.

#### C. Proposed Action and Action Alternatives

This is the section of the EA that explains the effects of the action alternatives on a variety of environmental resources. It begins with a brief description of how the section is organized, and includes a brief discussion of resources that wouldn't be affected by the proposed action, and, therefore, won't get a detailed analysis. The discussion should explain why those resources did not get the more detailed analysis.

Example of the Proposed Action and Action Alternatives introduction paragraph:

In this section, we discuss the effects on the project alternatives on environmental resources. For each resource, we first describe the affected environment, which is the existing condition and baseline against which we measure effects. We then discuss and analyze the specific environmental issues.

MHC does not propose any new construction, modifications, or changes to the project itself that would cause land-disturbing activities. However, MHC does propose to periodically remove sediments from the reservoir. This issue is discussed in the Aquatic Resources Section (section V.C.1 – Sediment Removal).

There are no other issues dealing with geology and sold resources; therefore, we do not address them further.

For all resources that will be addressed, you should describe –by resource—(a) the affected environment, (b) your analysis of the proposed action and any other recommended alternatives or measures, and (c) any unavoidable adverse impacts. Use this format for all resource areas affected.

## Table 1-2 Principles of Cumulative Effects Analysis (Ref. 4CEQ 1997)

# 1. Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions.

The effects of a proposed action on a given resource, ecosystem, and human community include the present and future effects added to the effects that have taken place in the past. Such cumulative effects must also be added to effects (past, present, and future) caused by all other actions that affect the same resource.

2. Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, nonfederal, or private) has taken the action.

Individual effects from disparate activities may add up to or interact to cause additional effects not apparent when looking at the individual effects one at a time. The additional effects contributed by actions unrelated to the proposed action must be included in the analysis of cumulative effects.

## 3. Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.

Environmental effects are often evaluated from the perspective of the proposed action. Analyzing cumulative effects requires focusing on the resource, ecosystem, and human community that may be affected and developing an adequate understanding of how the resources are susceptible to effects.

4. It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.

For cumulative effects analysis to help the decision maker and inform interested parties, it must be limited through scoping to effects that can be evaluated meaningfully. The boundaries for evaluating cumulative effects should be expanded to the point at which the resource is no longer affected significantly or the effects are no longer of interest to affected parties.

5. Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.

Resources typically are demarcated according to agency responsibilities, county lines, grazing allotments, or other administrative boundaries. Because natural and sociocultural resources are not usually so aligned, each political entity actually manages only a piece of the affected resource or ecosystem. Cumulative effects analysis on natural systems must use natural ecological boundaries and analysis of human communities must use actual sociocultural boundaries to ensure including all effects.

6. Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects.

Repeated actions may cause effects to build up through simple addition (more and more of the some type of effect), and the same or different actions may produce effects that interact to produce cumulative effects greater thaen the sum of the effects.

## 7. Cumulative effects may last for many years beyond the life of the action that caused the effects.

Some actions cause damage lasting far longer than the life of the action itself (e.g., acid mine drainage, radioactive waste contamination, species extinctions). Cumulative effects analysis needs to apply the best science and forecasting techniques to assess potential catastrophic consequences in the future.

8. Each affected resource, ecosystem, and human community must be analyzed in terms of its capacity to accommodate additional effects, based on its own time and space parameters.

Analysts tend to think in terms of how the resource, ecosystem, and human community will be modified given the action's development needs. The most effective cumulative effects analysis focuses on what is needed to ensure long-term productivity or sustainability of the resource.

FERC's guidance will be added later to Attachment 1.